

proximate result of the aforestated breach of warranty of Black & Decker.

WHEREFORE, the plaintiffs demand judgment against Black & Decker in the amount allowed by law, together with prejudgment interest and all allowable costs and disbursements.

ANDREW M. BATH
Attorney for Heritage Mutual
Insurance Company

Dated: 9/11/92

BY: Andrew M. Bath

ANDREW M. BATH

P.O. ADDRESS:
10101 West Greenfield Avenue
Milwaukee, WI 53214-0248
(414) 774-9505

VLASAK, ROSENBAUM, WEEDE &
BRITTON, S.C.
Attorneys for Christopher G.
Natzke and Karen D. Natzke

Dated: Sept 8, 1992

BY: Ralph K. Rosenbaum

RALPH K. ROSENBAUM

P.O. ADDRESS:
735 North Water Street
Suite 802
Milwaukee, WI 53202
(414) 273-2905

FELLOWS, PIPER & SCHMIDT
Attorneys for American Family
Mutual Insurance Company

Dated: Oct 28, 1992

BY: Terry J. Booth

TERRY J. BOOTH

P. O. ADDRESS:
Fifth Floor, The Van Buren Building
733 North Van Buren Street
Milwaukee, WI 53202
(414) 225-4060
TJB/laa/T2/9711P

LOUIS I. ROTHSCHILD, PH.D., P.E.
FORENSIC ENGINEERING INVESTIGATIONS
858 CHURCH RD. ELKINS PARK, PA 19117
215-887-2106

January 28, 1991

Mr. John R. Schatzman, Investigator
Vlasak, Rosenbaum, Weede & Britton, S.C.
Suite 802 735 N. Water St.
Milwaukee, WI 53202

Re: Dorothy Drout

719-143

Dear Mr. Schatzman:

1. Introduction.

This report covers my forensic engineering investigation of the involvement of a G.E. Toast-N-Broil (TNB) oven appliance in the fire at the residence of [REDACTED] on December 13, 1988. In performing this investigation, I visited your offices on November 21, 1990 at which time I conferred with Mr. Ralph K. Rosenbaum, Jr. and yourself, preliminarily examined the evidential TNB's remnants, and received from you copies of your existing investigatory file.

You sent the evidential remnants to my offices by UPS on December 12, 1990.

During my further examination of the evidential remnants, I have taken complete forensic photographs. My original images are in 35mm color slide format which best directly facilitates my examination procedure. Prints of these photos will be furnished upon request.

2. Examination and Discussion.

I would broadly describe the GE TNB as consisting of an oven cavity having 2 steel-sheathed tubular heating elements mounted across the width of the cavity's interior top and 2 additional across the width of its bottom. The cavity is approximately 7" high, 7 1/4" deep and 11" wide. It is fabricated almost entirely of sheet steel. The left and right ends had both been molded of plastic and they served both as end covers and mounting legs for the appliance.

A wire shelf slides in and out guided by slots in each side of the cavity's interior. A drip pan and tray is provided for use during broiling or roasting foods from which fats and juices will fall.

The front of the cavity is a glass door which is hinged across its lower edge and is operated by pulling outward the plastic handle fastened on the upper edge. A hooked arm protruding inward from the right side of the door couples the shelf's movement to the opening and closing of the door. Most of the cavity's bottom comprises a crumb tray upon which bread crumbs and other food materials come to rest after falling off toast and other foods

930820 CCC2508 Ex. D
RMR-MKE

during cooking. The crumb tray is hinged along its rear and held in the normally closed position by a simple detent.

The operating controls are mounted on a front panel on the cavity's right. The compartment which houses the controls are separated from the oven cavity by the cavity's right side. That side thus also serves a partition between the two compartments. The controls compartment is approximately 7" high, 2" wide and 7 1/4" deep.

The oven cavity is vented by two 1 1/4" long 3/16" wide horizontal slots at its upper center rear. The controls compartment is rear-vented by seven similar horizontal slots uniformly spaced along the compartment's height. Although it would have been desirable for the controls compartment to have been well sealed off from the cooking cavity, the degree of sealing is imperfect to a significant degree. In particular, there is an opening of the cavity at its right front bottom corner to allow free movement of the push-rod which interconnects the door and the door interlock switch which is mounted in bottom of the controls compartment.

There are two groups of controls mounted on the panel. At the panel's upper half is the oven-broiler rotary knob which has baking temperature markings from OFF to 500°F. respect to clockwise rotation of the knob. As the overcoming of a detent is felt during further clockwise rotation of the knob, the cavity is switched into the broil mode which is temperature-controlled at about 550°F. Whereas both the upper and lower sets of heating elements are energized during baking, only the upper set is energized during broiling.

There is not the usual temperature-sensing bulb for controlling the thermostat within the cavity as in a conventional oven; instead, the electrical current which energizes the heating elements is connected in series with a small heating coil within the controls compartment. This coil heats a bimetallic thermostat and this arrangement is intended to thermostatically track and maintain the temperature within the cavity at the temperature set in at the front panel.

The lower half of the control panel is occupied by the toaster controls: a rotary knob which has settings for the desired darkness of the toast from light to dark in counterclockwise marking and a lever is provided for switching on the toaster mode. When depressed to its downward limit, a detent is felt and the lever remains down until the toasting cycle is complete. As with the oven instrumentation, the temperature sensing for toasting is performed within controls compartment.

In the middle of the panel, between the oven and toaster controls, is a small red indicator light which is illuminated whenever electrical current is flowing through heating elements.

The power cord enters the appliance at the bottom rear of the controls compartment where it is attached to the door interlock switch. This switch incorporates 2-pole single-throw contacts which open the 120 VAC power circuit

from the cord to the interior of the appliance and thus disconnect the cord when the door is opened approximately at least 45°. The door is linked to the interlock switch by a rod, one end of which hooks into the bottom of the door's right side and the other end into the switch's actuating lever.

3. Findings.

3.1. The bottom of the crumb tray was die-stamped with the following product identification:

GENERAL ELECTRIC
CAT. NO. A10T26
120 VOLTS 1500 WATTS
50-60 CPS A.C. ONLY
BRIDGEPORT, CONN. MADE IN U.S.A.

During the fire, virtually all flammable plastic resins were consumed. Plastics were employed in the door handle, the appliance's 2 end sections, and the enclosure-body of the door interlock switch. If any flame-inhibiting mineral fillers were employed in the molding mixtures for these plastic components, they did not survive in their resulting brittle and fragile condition the handling by the firemen during the fire's suppression.

As, in my experience is common, a covering of aluminum foil had been placed on the TNB's crumb tray in order that both crumbs, which rest loosely in the tray, and other food materials such as melted and recongealed sugar, fats, and oils could be effectively removed. The crumb tray (which is the cavity's bottom) is thereby effectively cleaned without mess. It should be noted that G. E. owner's manuals do not warn against this procedure. The sheet of foil thus remaining in the evidential remnants was only partly melted. This condition of this material, which melts at between 1000°F and 1200°F, proves that the temperature attained at the cavity's bottom did not quite attain that level.

3.2. The fire did indeed originate within the TNB. However, both at the time of my original brief examination of the appliance in your offices in November, 1990 and when I initially examined it here at my office on January 15, 1991, no residues of any materials which would be cooking or otherwise stored within the oven cavity were in evidence.

Both the providing of the source for the fire's ignition and the availability of the fuel which could be ignited and spread the fire were due to the defects in the appliance's design. As for the ignition source, the right-hand pair of contacts of the door interlock switch were welded together and its left-hand contact's supporting armature spring leaf was partially melted away. The melting of the latter clearly confirms that it had been subjected to a temperature level significantly higher than could have been attained by the combustion of the flammable materials of the fire. The temperature level required to melt the spring leaf required electrical activity such as results from a defective condition in the electrical circuitry and components of the appliance. The fire clearly originated at

the contacts of the interlock switch which reached a temperature level sufficient ignite adjacent flammable materials.

Although the contacts of the oven and toast thermal controls showed no specific evidence of having originated the fire, their condition indicates that one of them, more likely the contacts of the bake-broil control had remained in the closed or semi-closed condition which facilitated the flow of current through the interlock switch.

Examination found no there evidence of electrical activity such melted conductor metal in the busswires interconnecting the interlock switch and the cooking controls. Thus, this fire was initiated by heat energy released at defectively performing interlock switch contacts.

3.3. The design of the G. E. TNB was defective with respect to sealing off from the cooking cavity the flammable and electrical-contact-contaminating vapors which are inherent to the toasting, baking, and broiling processes. They boil off the heated surfaces of food materials being baked, roasted, or broiled. The surface evaporation is accompanied by considerable spattering which sprays liquid fats and oils beyond even the edges of the drip pan or tray. These splatterings coat the cavities top, sides, rear and drip tray.

The vapors, either directly from food being cooked or boiled off the surfaces of the cavity, deposit condensation on surfaces whose temperatures are below that of their gaseous state and these vapors include those of oils and fats from the food being or having been cooked in the cavity.

3.3.1. When leaking into the controls compartment and condensing on the electrical contacts of the bake or toast thermal controls, or on the interlock, they reduce to heavy gummy organic residues which cause thermal controls to malfunction by tending to stick together and result in overcooking and overheating within the cavity. The contamination of the contacts' surfaces manifests itself by pitting and by the brightened points of recently melted metal due to point-to-point arcing between the contacts when they attempt to open.

The the continuation of the foregoing process results in increasing electrical resistance in the pairs of contacts. Since electrical current dissipates heat in a resistance as it passes through, the temperature of the contacts increases proportionally with the increased resistance. Also, contacts will tend to become welded together when they are sufficiently pitted. Thus, the condition of the evidential remnants of the interlock switch contacts is explained.

When contaminated as described above, the contacts occasionally, or even often, tend to stick together in the ON condition for either the bake-broil or the toast controls. In this condition, the contacts' electrical resistance may be low enough to pass amounts of current for normal functioning the heating elements; otherwise the contact resistance may limit that current until the heat dissipated on them (the contacts) burns away the contamination.

The condensation of the products of the toasting, baking, and broiling processes also results in an inherently dangerous condition within the controls compartment. Not only does it cause the source of ignition in the persona of the failure of the interlock switch contacts, but it provides the fuel for the fire and its spread.

3.3.2. The sealing of the oven cavity from the controls compartment was defective in the following specific manners: facilitated by the opening in the lower right front of the cavity for the rod interconnecting the door and the switch and by the imperfections in the joints between the cavity's right side (which also serves the partition between it and the controls compartment), fats and greases from the cooking processes condensed heavily in and around the interlock switch in the bottom of the controls compartment. Whether, their condensations on the bake-broil contacts or the toast contacts contributed to this fire cannot be determined.

However, the fire originating at the switch contacts thus readily spread to oven cavity and burning fats and oils dripped down from the switch to spread outside the cavity to the kitchen proper.

3.4. A short occurred in the power cord 4" away from the interlock switch. The foregoing statement is based on the assumption that the original length of the power cord was 40" as is the length of the cord on the Greening toaster (Cat. No. A4T114) whose cord is undamaged. The validity of this assumption may be settled during discovery during any ensuing complaint.

The remaining 36" length of the power cord was not thermally damaged. The ends of cord's the two pairs of 16 gauge stranded copper conductors did not carry the usual copper balls because the balls had apparently broken off before my examination. However, the copper strands nearest the break were in the brittle condition have having been heated nearly to copper's melting temperature (1981°F).

Note may be taken that the input terminals of the interlock switch to which the conductors of the cord had been attached appear neither intended for crimping, as with Greening, or for compression within set screws. They seem to be identical to Miller (Cat. No. unknown) and may be the male terminals for mating with female sleeve terminals on the power cord. In neither these evidential remnants nor in Miller are bits of material confirming the method of the attachment of the power cord's conductors

The location of this electrical short so near to the appliance clearly indicates the short occurred due to the melting away of the thermoplastic insulation of the cord's conductors and that result could only have occurred from the heat from a fire originating within the appliance. If the appliance had been approached by an external fire, its internal components would have had a fair degree of thermal protection by the thermal insulating characteristics of this particular appliance. Its power cord was not so protected and employed thermoplastic insulation which would have greatly softened and begun to melt away at 350°F. Thus, a fire from an external source would clearly have caused the cord to short at a greater distance away

John R. Schatzman

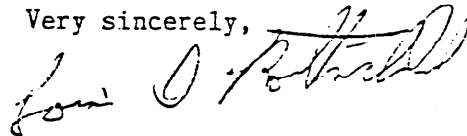
January 28, 1991

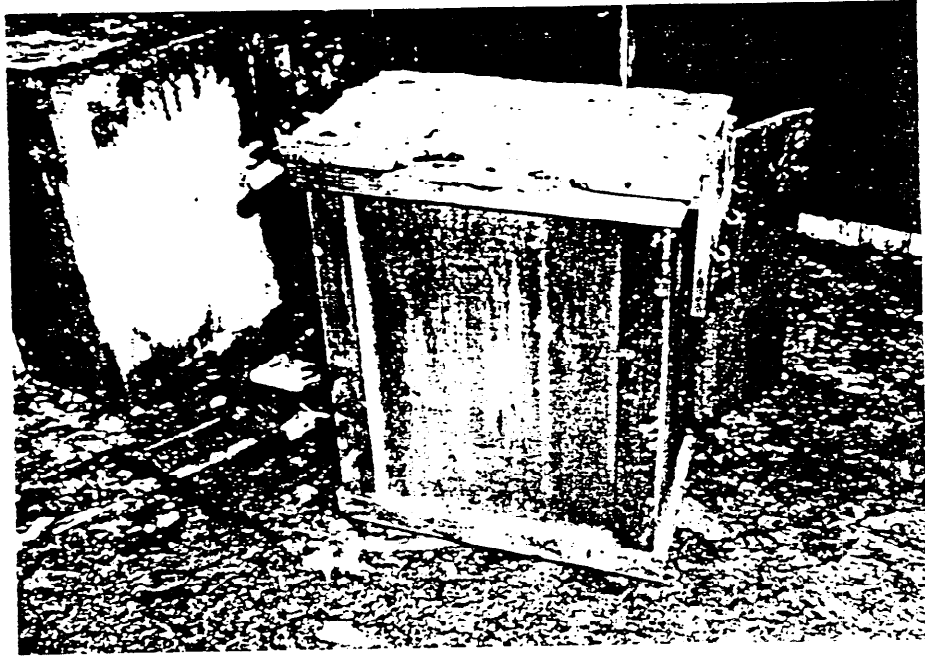
Page 6

from the appliance and thus disconnect the appliance from further flow of electrical current. The present condition of the interlock switch contacts, which was due to the flow of current, would not have occurred.

Please contact me if any questions arise concerning this report or the investigation on which it is based.

Very sincerely,

A handwritten signature in dark ink, appearing to read "John R. Schatzman", written in a cursive style.



PHOTOGRAPH OF KITCHEN AREA.
TOASTER OVEN KEPT BETWEEN
REFRIGERATOR AND DISHWASHER

ACCIDENT INVESTIGATION REQUEST FORM

Document Number See attached document X336977

Date of Incident 8/6/90 Category I.D. SECTION 4

Follow-Up Requested Hazard Analysis Section 15

Type Follow-Up Requested Telephone Call or On-Site

Headquarters Contact Renee Rauchschwalbe

Assignment Message Obtain copies of lawsuit fire report and product evaluation reports (both the local report and Philadelphia report). If product is available please obtain. Determine "where" three other fires involving Forster ovens manufactured by GS" occurred including names and addresses of victims. Interview victim's attorney and victim of the Aug. 6, 1990 incident

Person(s) to Contact (1) Christopher & Karen Natzke Oconomowoc
(2) Attorney of the Natzkes Ralph Rosenbaum
(3) Oconomowoc Fire Dept

Guideline _____

Requested By RR

Task Number 930820CCC7508

Assigned to _____ Date 930820

1990 fire however

Toaster led to blaze, suit says

Black and Decker appliance blamed for August fire

By GERALYN MCBRIDE
Freeman Staff

WAUKESHA — An Oconomowoc couple filed a lawsuit Monday alleging that the Lac La Belle home they rented caught fire because of a defect in their toaster oven.

The Aug. 6, 1990 fire caused about \$75,000 damage to the single-story frame home at 129 Saeger Ave., records say.

The couple, who have since moved to Oconomowoc, were not hurt in the blaze.

The fire was caused by a short in the toaster oven, the Oconomowoc Fire Department said.

The American Family Insurance and Heritage Mutual Insurance are seeking unspecified damages from Black and Decker.

The contents of the home were

"We had the oven examined locally and by an expert in Philadelphia. They both found a defect in the design."

— Ralph Rosenbaum
Attorney

insured by Heritage Insurance, while the homeowners insurance was issued by American Family Insurance, said Ralph Rosenbaum, the attorney.

The two insurance companies have paid more than \$52,400, records say.

Three other fires involving toaster ovens manufactured by General Electric were settled before going to trial, Rosenbaum said.

General Electric sold its small appliance division to Black and Decker and "essentially put their name on the GE oven," Rosenbaum added.

"We had the oven examined locally and by an expert in Philadelphia," Rosenbaum said. "They both found a defect in the design."



Lisa Curtis, FREEMAN STAFF
On Monday slid into a

train

panicked at first and then to feel the pain," he said.

ing to a Sheriff's Department report, the engineer of saw the red Suburban in the corner of his eye and stop, but couldn't. Geigle, which was pulling a bit the side of the train pped parallel to the

incident is under investiga-

ebate for efficiency

through WHEDA's Home ment Loan Program.

maximum rebate incentive 50, and the minimum of energy-related im- nts to qualify for the re- ntive is \$1,000.

g is provided by the in Energy Bureau in the ent of Administration.

s are limited and are on a first-come, first-asis.

ted homeowners should EDA at 1-800-33-HOUSE

Kolakowski wins photo contest

WAUKESHA — A photo of her husband holding their infant son just after a bath has won Sandra Kolakowski first place in The Freeman Kodak International Newspaper Snapshot Awards contest.

Kolakowski, of Oconomowoc called her photo "Baby Big Lip and Daddy." She will receive a large coffee-table book from Kodak called "Odyssey ... The Art of Photography at National Geographic."

Tied for runner-up were Sherry Tollefson of Waukesha, for her scenic photo of Athabasca Falls in Jasper National Park, and Donald R. Carlson of Clinton Mich., for his photo of a cat sleeping in a bowl at a friend's house.

They each will receive a "Photo Time" travel alarm clock from Kodak.

Five honorable mentions were also awarded. They are:

■ Karen Sue Mead of Waukesha, for a portrait of her son.

■ Joanne C. Turk of Whitefish Bay, for her photo of three children sleeping on a bus after a field trip.

■ Joseph R. Greco of Menomonee Falls, for his photo of a baby wearing a diaper on its head.

■ Jean Makowski of Hartland for her photo of two of her granddaughters.

■ Jeff Zuhlke of Wales, for his photo of a chipmunk.

Each of the honorable mention winners will receive a Kodak Softaire Flashlite and key chain.

24-HOUR CLASSIFIED

ONE CALL DOES IT ALL

FREEMAN FREELINE
542-9024

• Place your ad
• Hear your ad
• Re-record your ad
If necessary

OR YOU CAN CALL:

Mon.-Thurs. 8-5:30,
Fri. 8-5, Sat. 8-12

0216

939629CCC1445

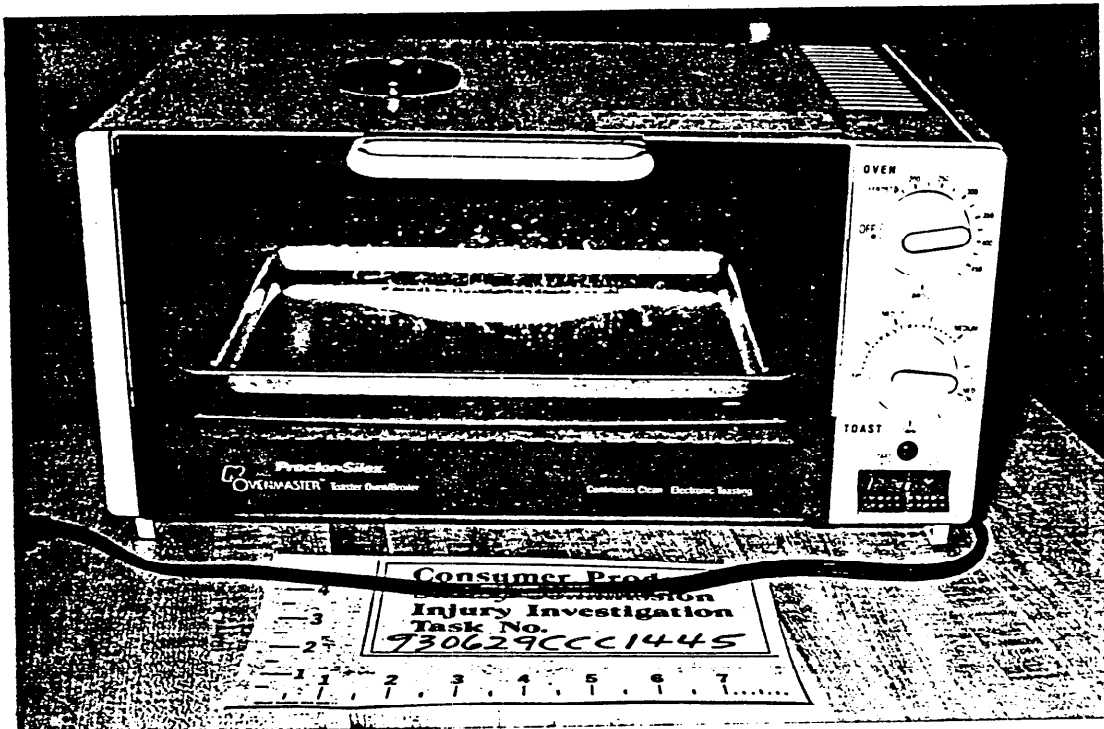


Photo 1. Toaster Oven, door open.

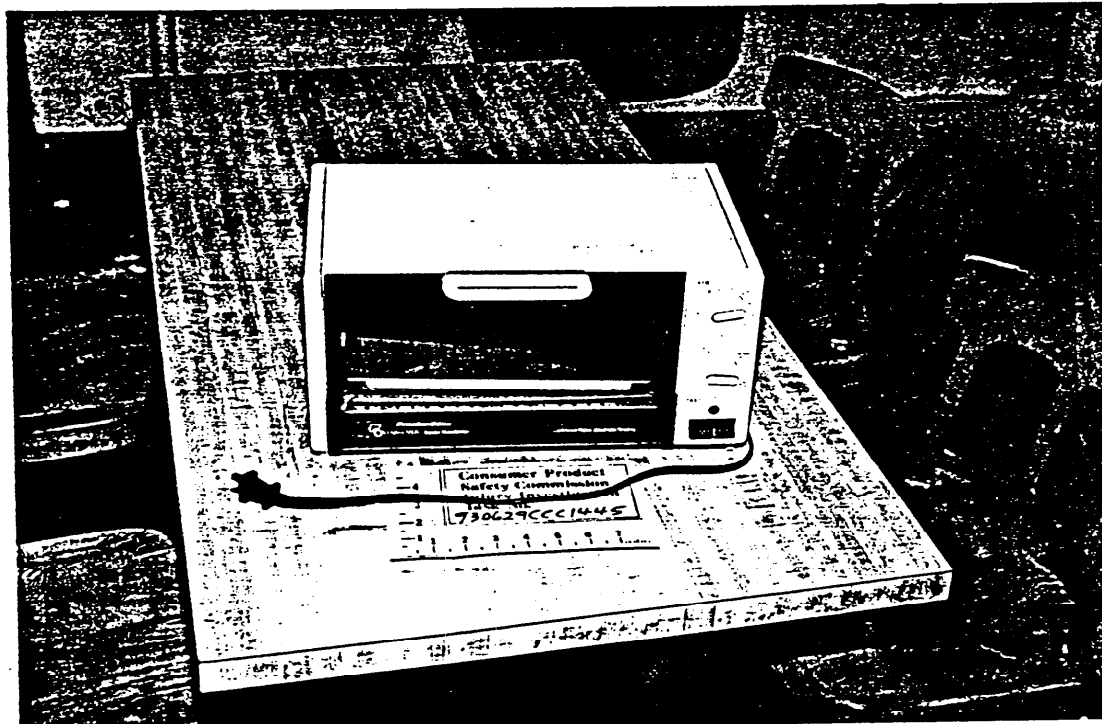


Photo 2. Toaster oven, door closed.

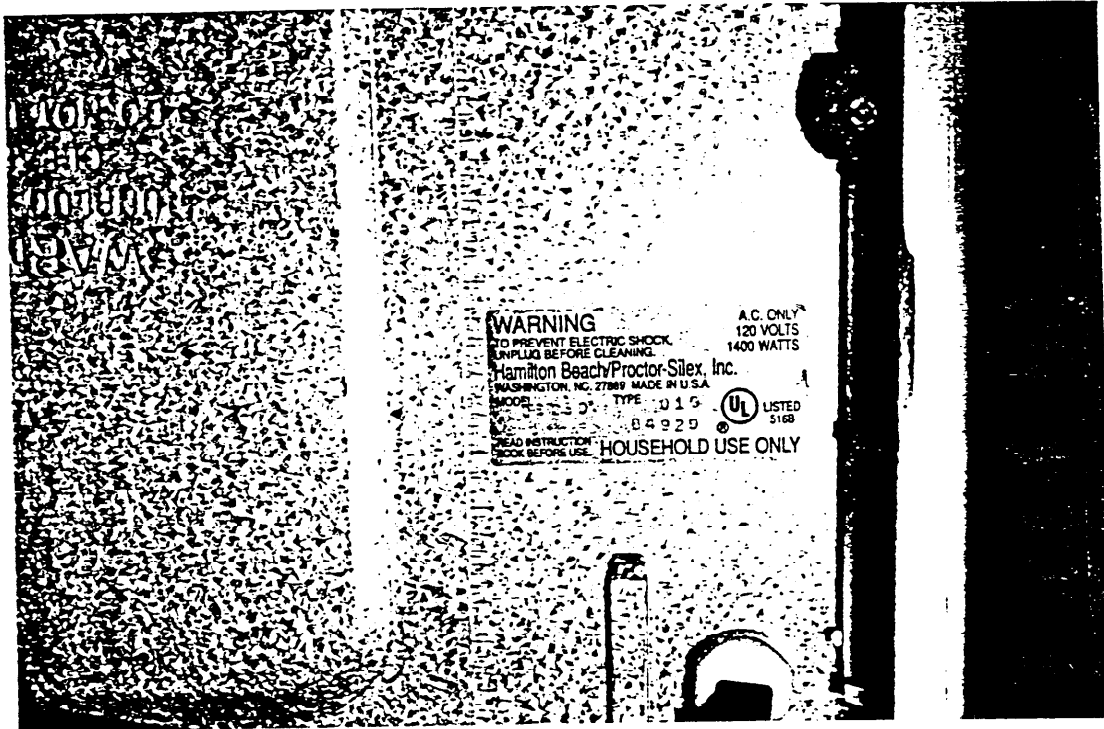


Photo 3. Sticker on unit.

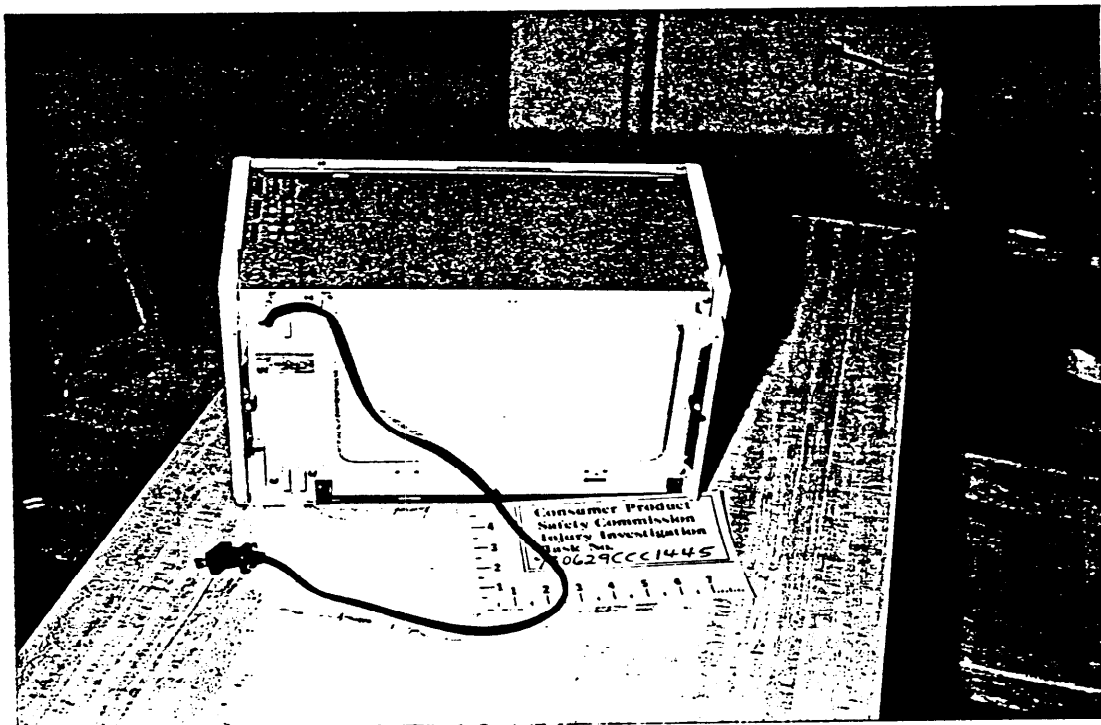


Photo 4. Unit from underneath.

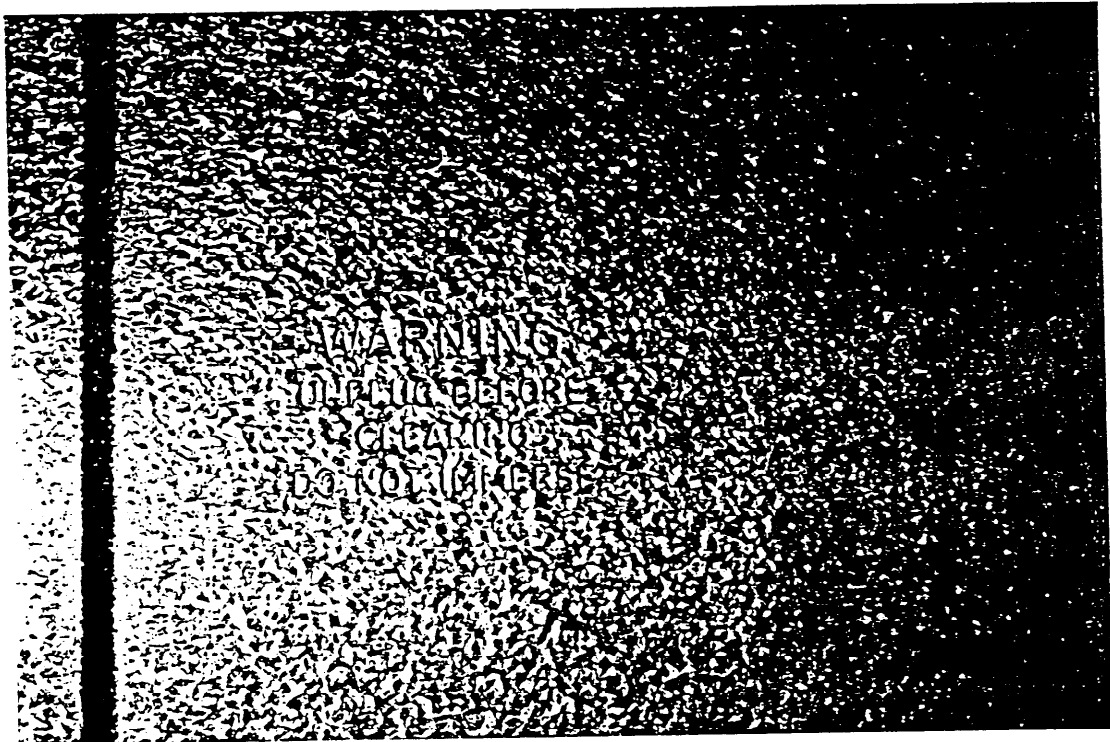


Photo 5. Warning on unit.

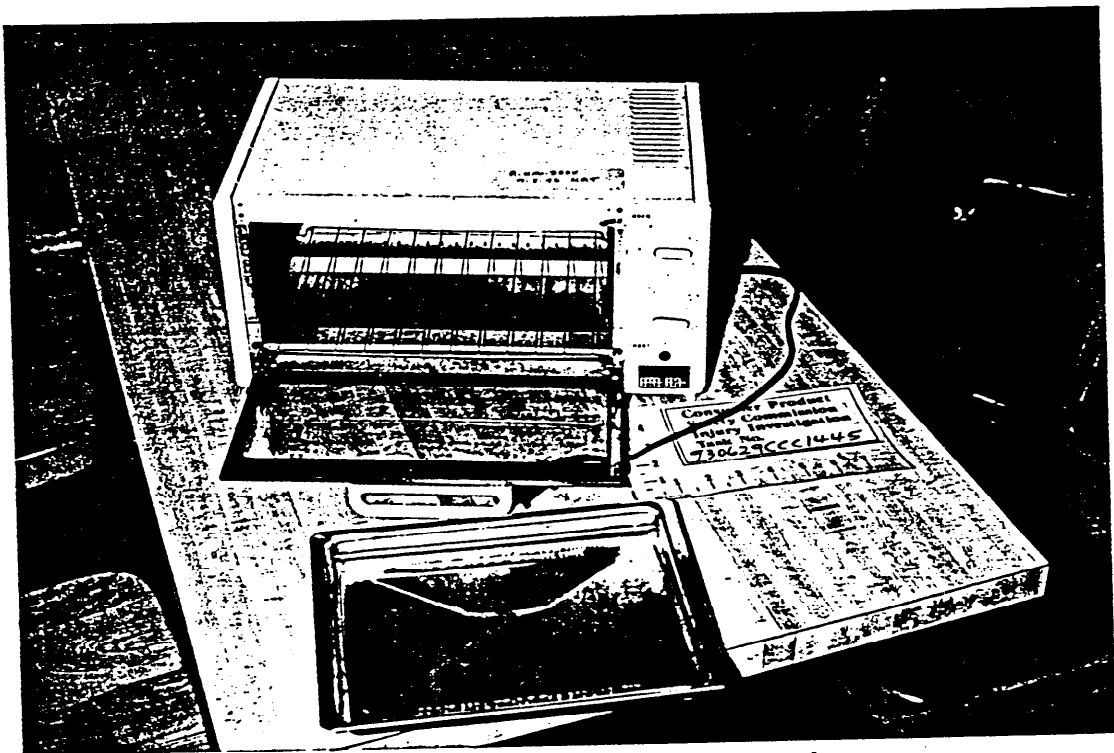


Photo 6. Unit with door open and pan removed.



Photo 7. Warning on pan, also in French.

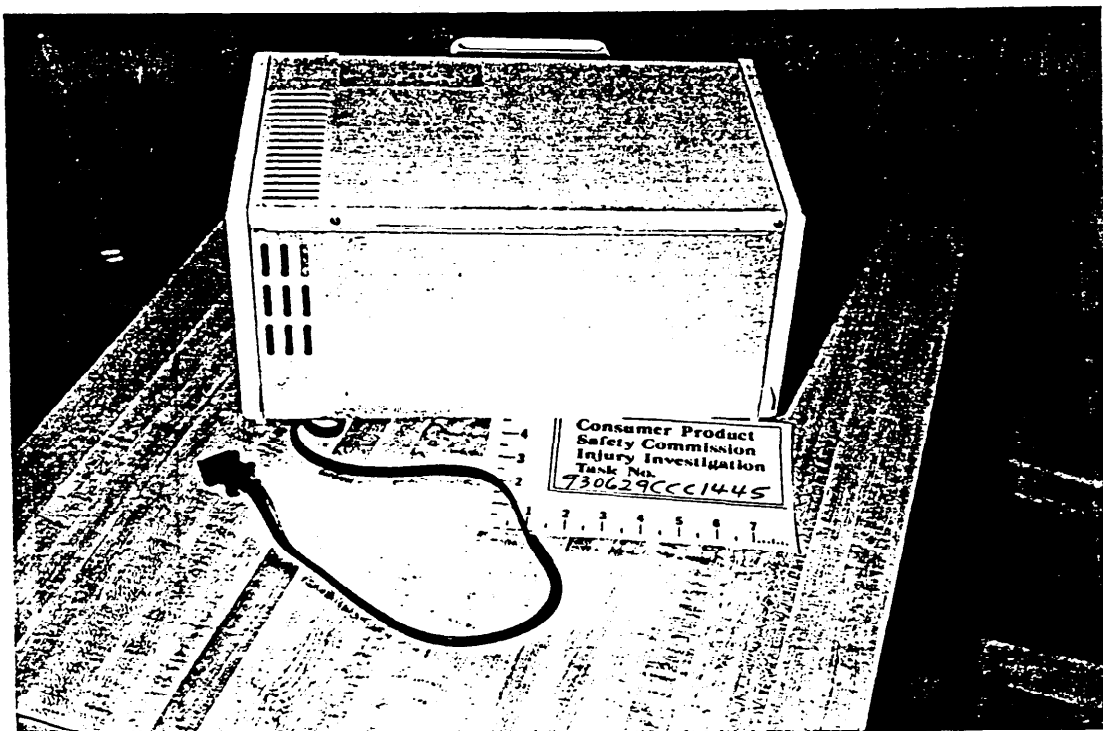


Photo 8. Back of unit.

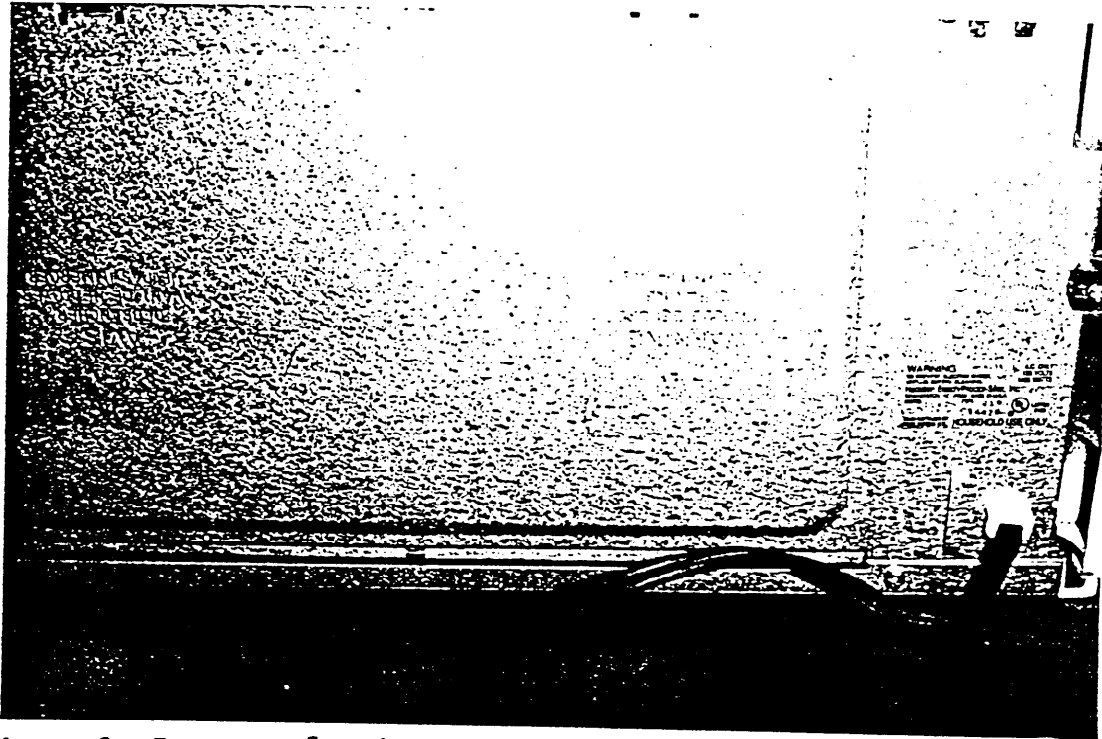
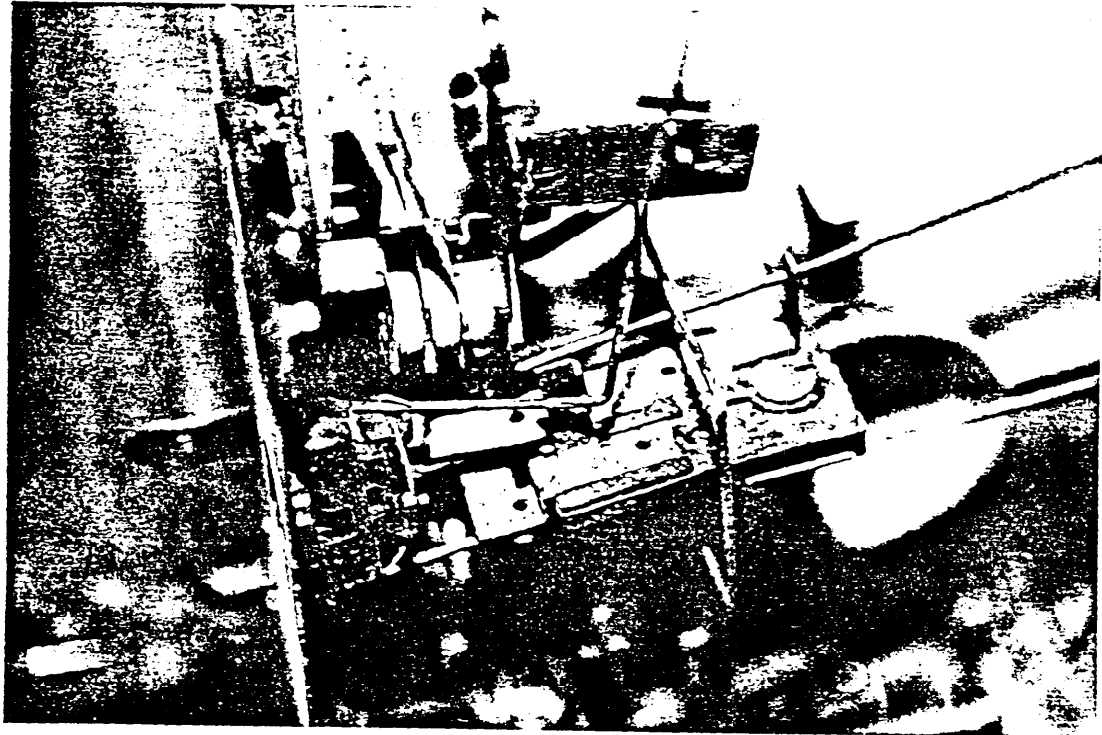


Photo 9. Bottom of unit.



Close-up views of internal components and contacts found behind oven control dial and toast control lever.

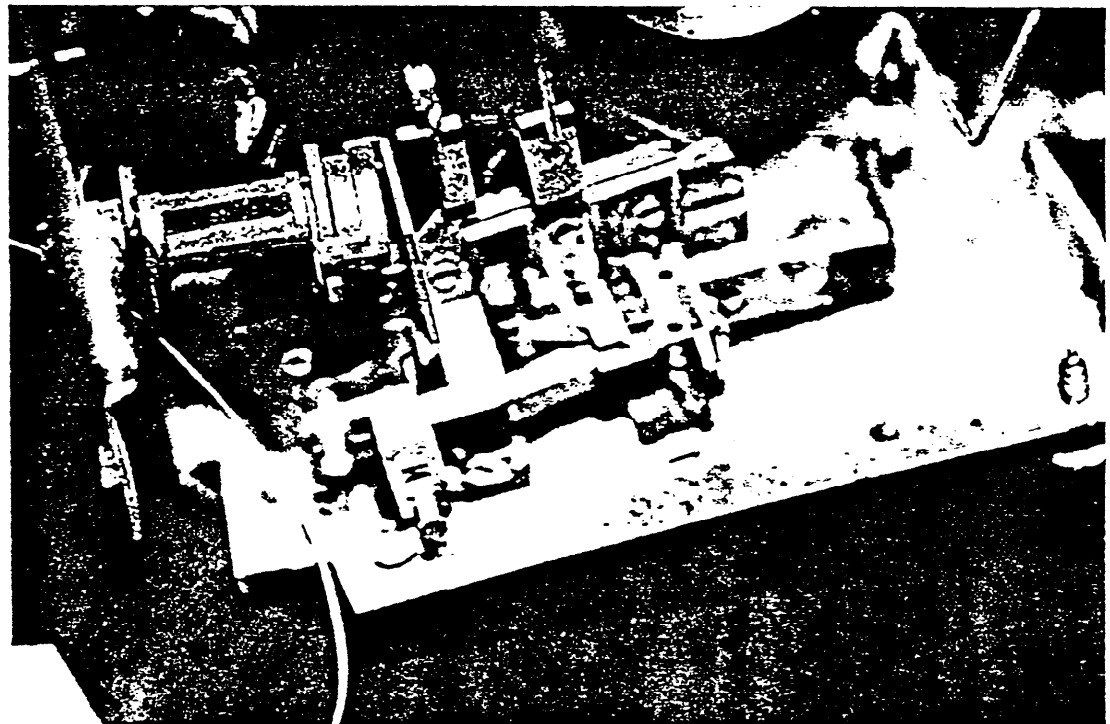
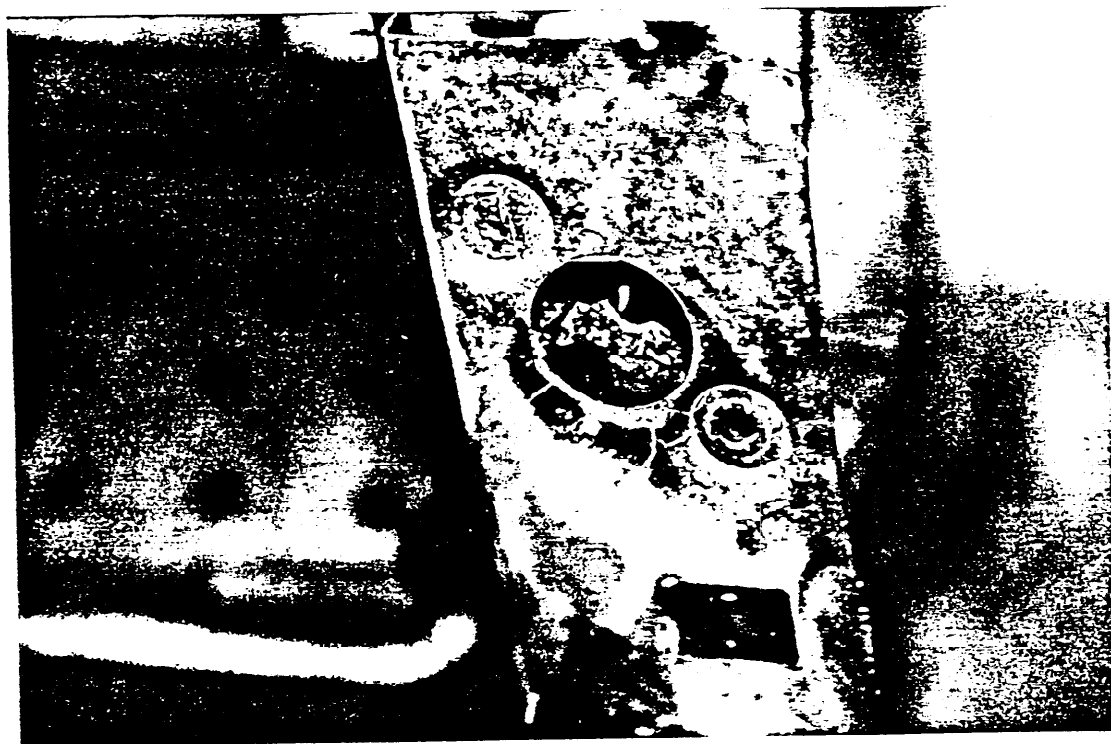
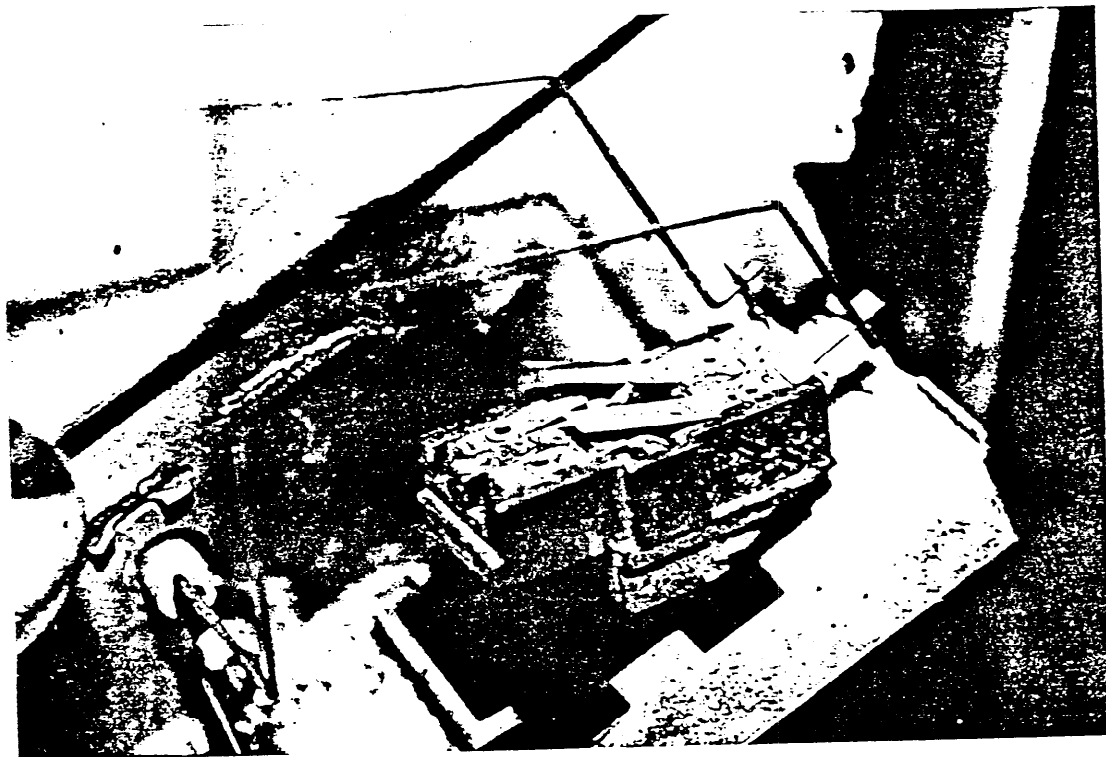


Exhibit I



Photograph showing remains of control panel.

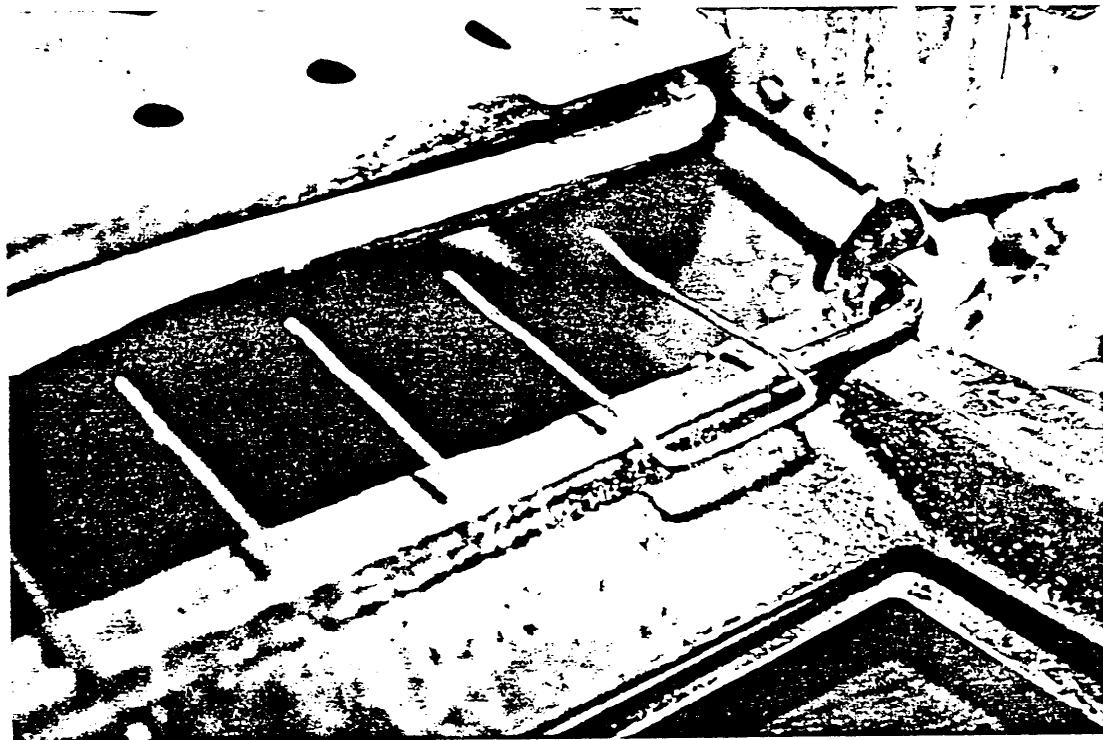
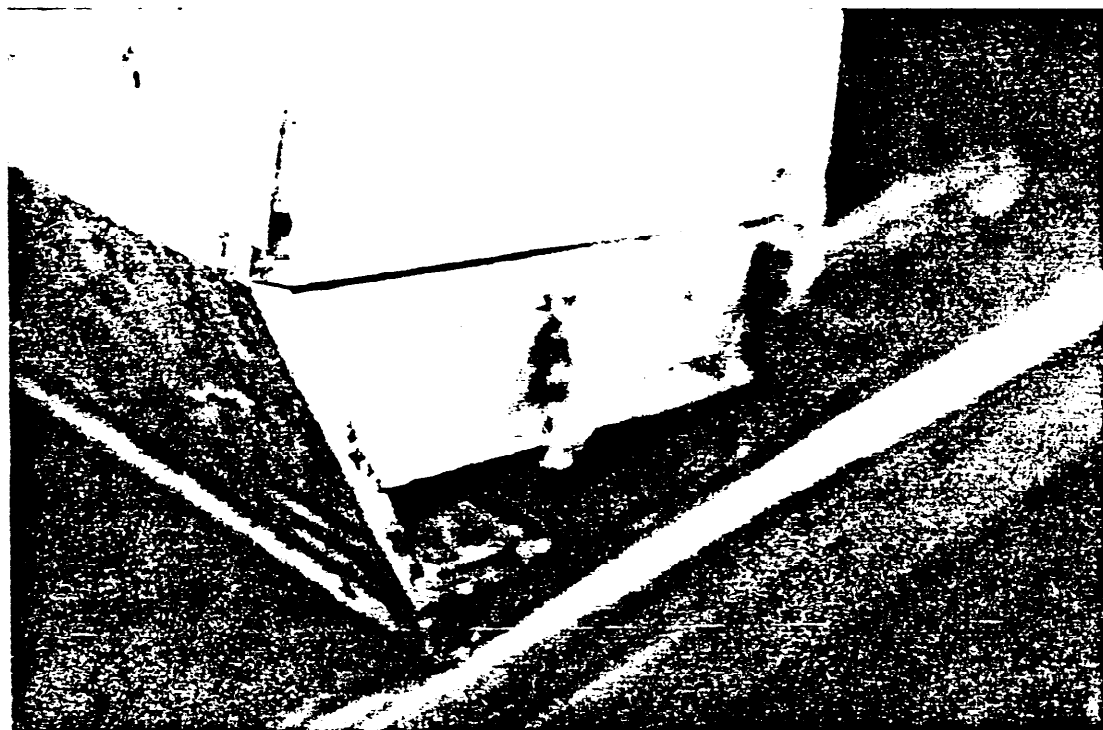


Photo showing grate attachment to door to enable the grate to come out when the door is opened



Side View-Venting

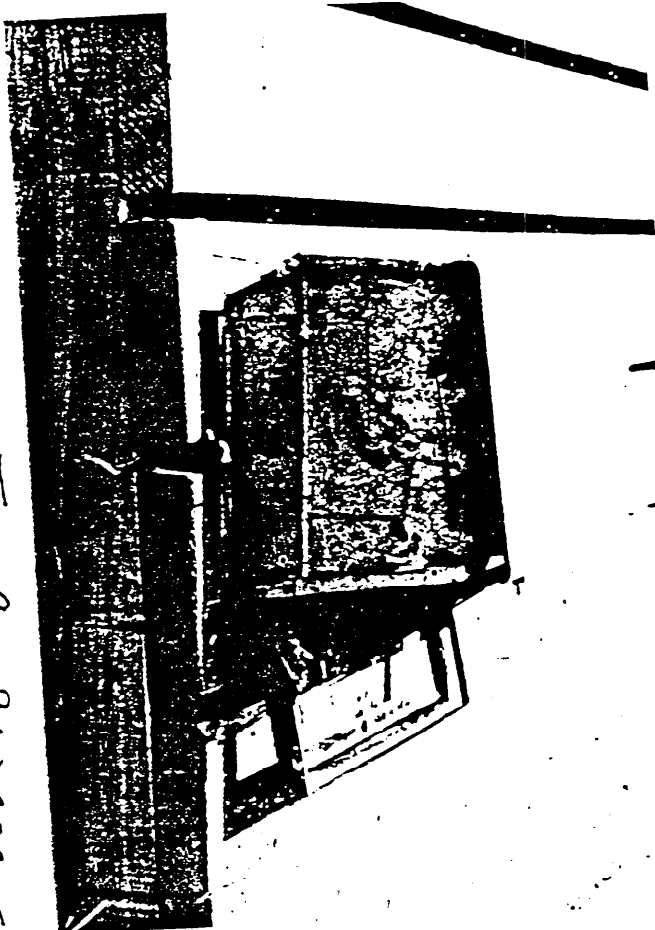
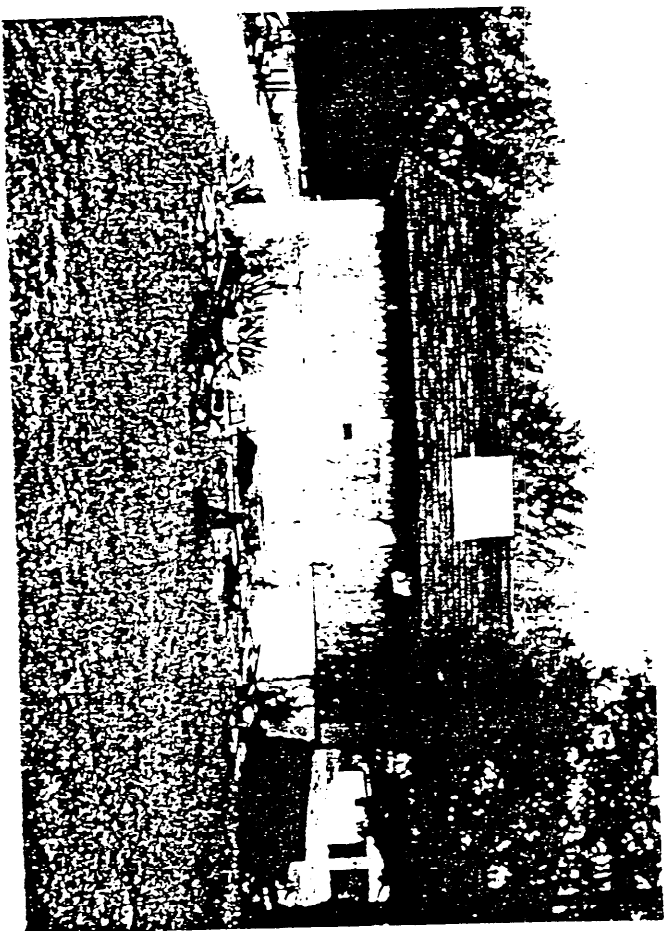
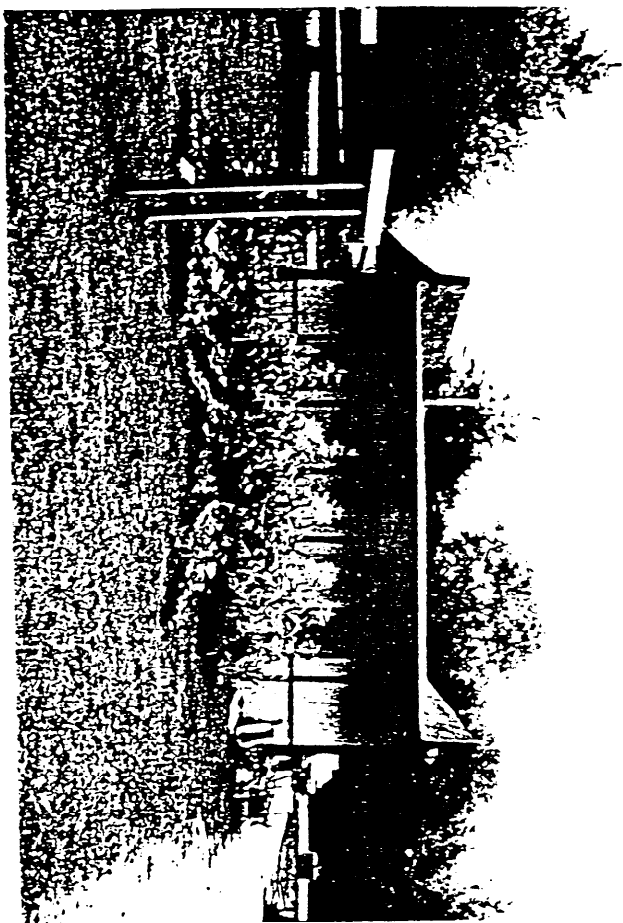
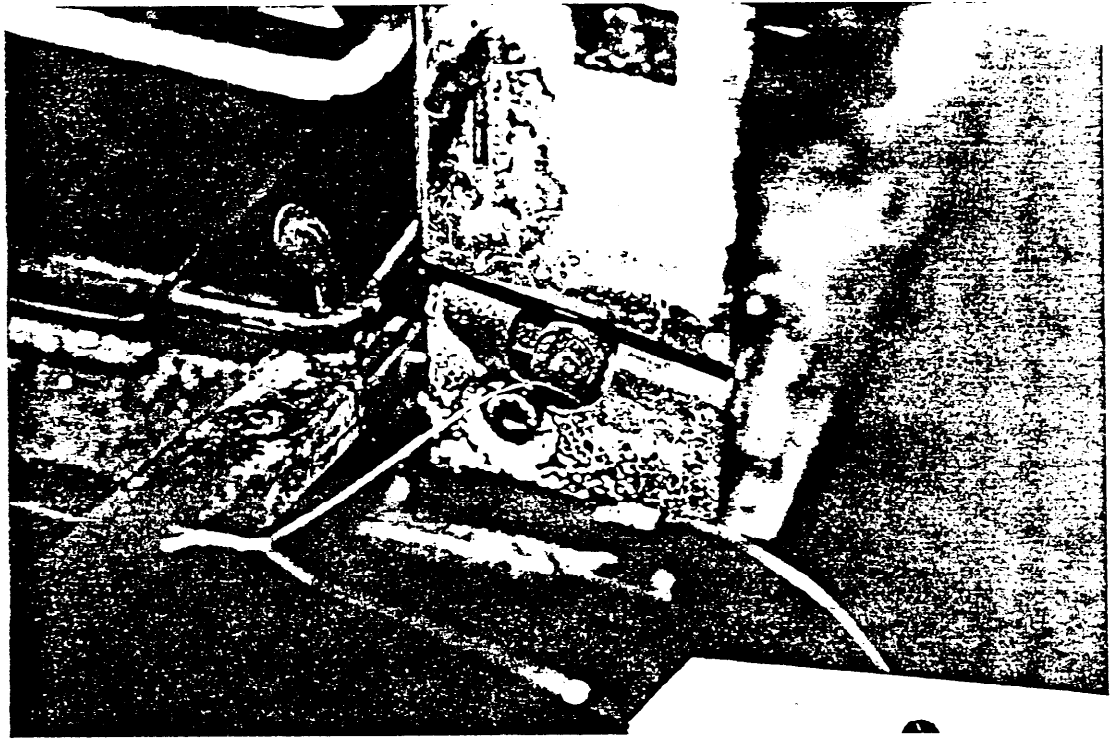


Exhibit J 930820 CCC 2501



Additional photo of outside control panel.

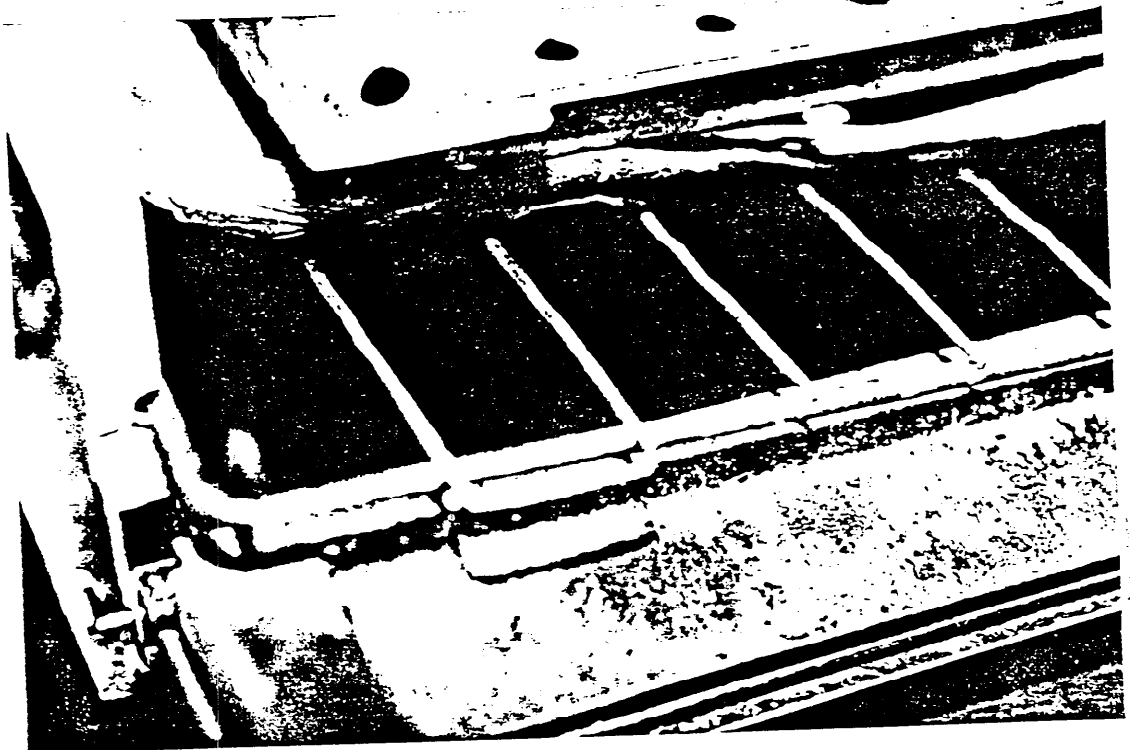
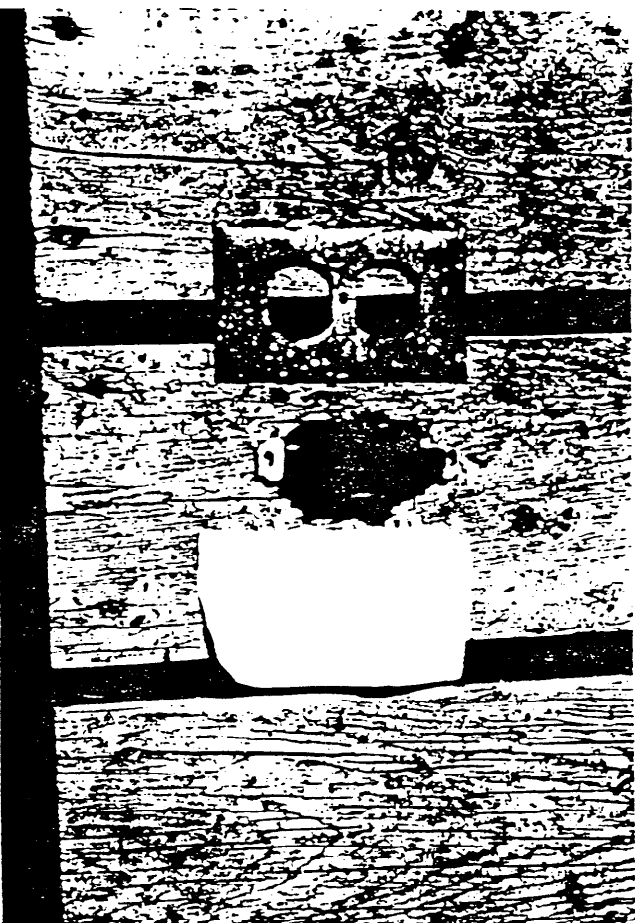
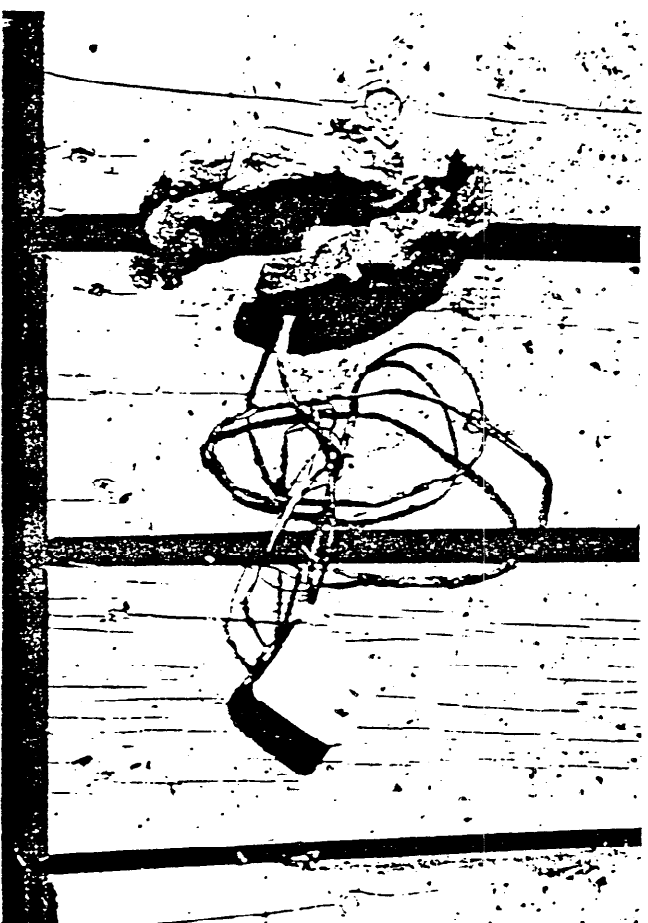


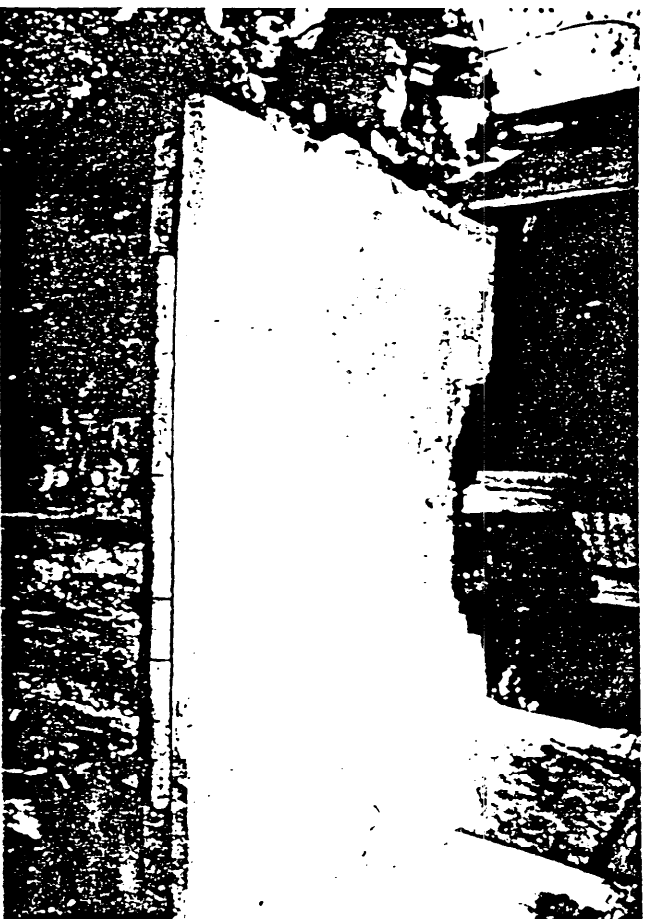
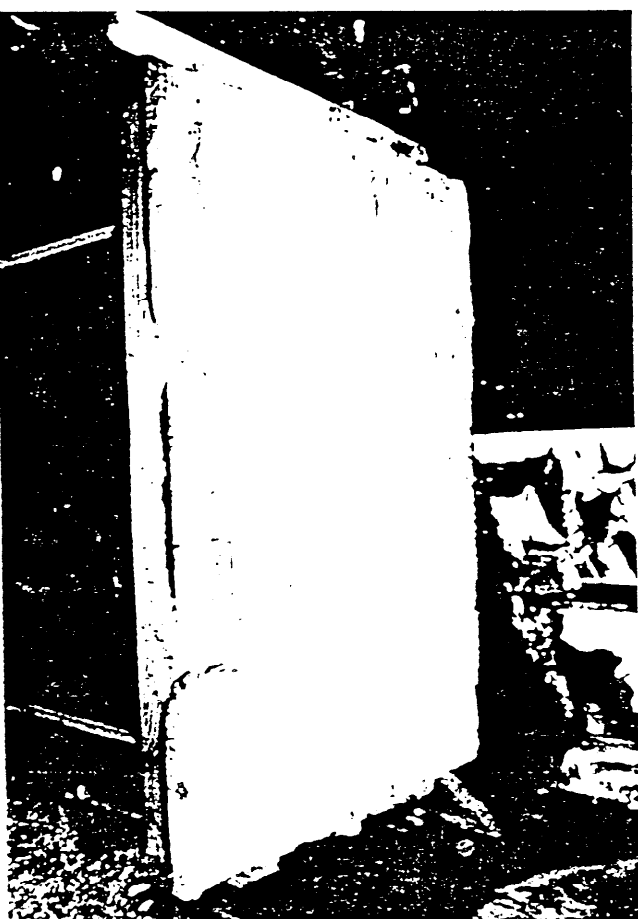
photo of grate with door open



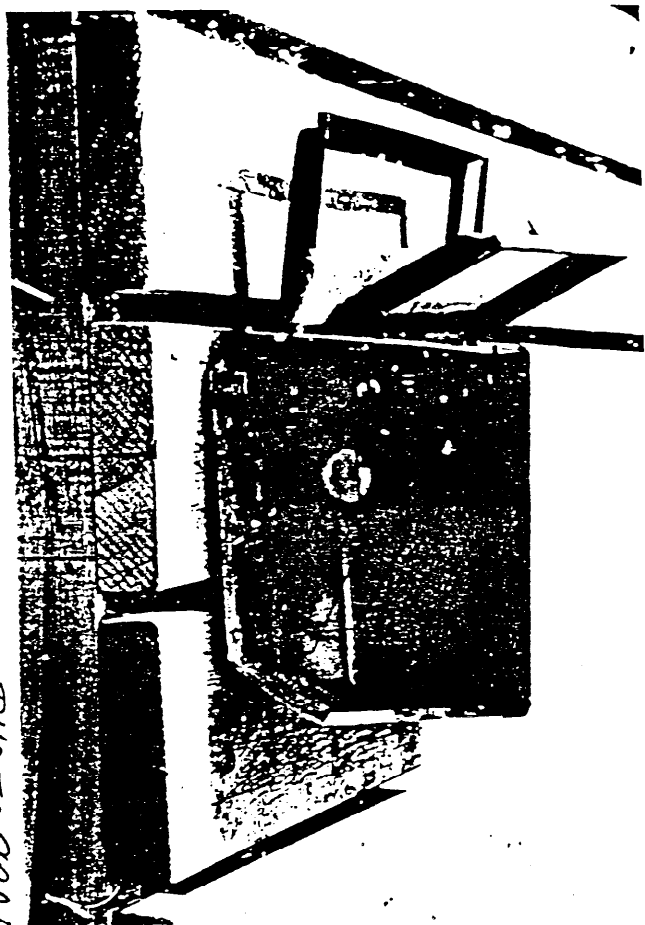
WALL OUTLET



"DUST BUSTER" REMAINS



CLOSE-UP VIEWS OF
CART TOP ON WHICH TOASTER OVEN
SAT.



PHOTOGRAPHS OF TOASTER OVEN

